In the Claims

This listing of claims will replace all prior versions, and listings, of claims in the application.

Claims 1-11 (canceled)

Claim 12 (currently amended):

The semiconductor ~~Semiconductor~~ sensor according to claim ~~21~~ 22, wherein each of the plurality of pixel surface coatings comprises light impervious material wherein each of the plurality of pixel surface coatings are light impervious ~~and the second conductive layer comprise metal or any other conductive, light impervious material~~.

Claim 13 (currently amended):

The semiconductor ~~Semiconductor~~ sensor according to claim 12, wherein each of the plurality of pixel surface coatings comprises ~~and the second conductive layer comprise~~ aluminum.

Claim 14 (currently amended):

The semiconductor ~~Semiconductor~~ sensor according to claim ~~21~~ 22, wherein the ~~second~~ conductive layer acts as ~~comprises~~ a capacitor electrode.

Claim 15 (currently amended):

The semiconductor ~~Semiconductor~~ sensor according to claim ~~21~~ 22, wherein a potential is applied to the ~~second~~ conductive layer.

Claim 16 (currently amended):

The semiconductor ~~Semiconductor~~ sensor according to claim ~~21~~22, further comprising a plurality of ~~wherein a~~ detection surfaces positioned above the plurality of pixel surface coatings, each detection surface corresponding to one of the plurality of pixel surface coatings wherein each detection surface ~~of the sensor~~ comprises an electron-intensifying coating, wherein electron multiplication occurs when an electron is incident on the electron-intensifying coating. ~~and transmit channels to the pixel surfaces being intended.~~

Claim 17 (currently amended):

The semiconductor ~~Semiconductor~~ sensor according to claim 16, further comprising a plurality of second conductive layers wherein each of the plurality of second conductive layers is positioned above a corresponding pixel surface coating and below a corresponding electron-intensifying coating wherein a first additional electric potential is applied to each of the plurality of second conductive layers wherein the conductive layer comprises at least one extension positioned above the plurality of detection surfaces, wherein a second additional ~~electron-intensifying coating comprises a conductive thin layer disposed on an upper and lower side, to which a~~ electric potential is applied to each of the at least one extension.

Claim 18 (currently amended):

The semiconductor ~~Semiconductor sensor~~ according to claim ~~21~~ 22, wherein neighboring pixel surfaces coatings have ~~a~~ different electric potentials.

Claim 19 (currently amended):

A method of sensing electrons, comprising: ~~Use of a semiconductor sensor according to claim 21, assembled in a vacuum system with photo cathode which converts photons into electrons in an image oriented way.~~

providing a semiconductor layer having a top surface;

positioning a plurality of pixel surface coatings above the top surface of the semiconductor layer to form a corresponding plurality of pixels, wherein each pixel surface coating is separated from each adjacent pixel surface coating, wherein the plurality of pixel surface coatings are conductive, wherein electrons incident one of the plurality of pixel surface coatings are absorbed by the one of the plurality of pixel surface coatings resulting in a charge associated with the pixel corresponding to the one of the plurality of pixel surface coatings such that the charge produces a readable voltage associated with the pixel corresponding to the one of the plurality of pixel surface coatings;

positioning a conductive layer above the top surface of the semiconductor layer so that electrons passing between adjacent pixel surface coatings are incident on the conductive layer and prevented from penetrating into the semiconductor layer; and

reading the readable voltage associated with the pixel corresponding to the one of the plurality of pixel surface coatings, wherein the conductive layer is insulated from the plurality of pixel surface coatings.

Claim 20 (currently amended):

The method ~~Use~~ according to claim 19, further comprising a positioning photo cathode above the plurality of pixel surface coatings wherein the photo cathode converts photons into electrons,m wherein a vacuum exists between the pixel surface coatings and the photo cathode. ~~wherein the vacuum system is equipped with one or more multi-channel plates for the intensification of an electron flow.~~

Claim 21 (canceled):

Claim 22 (new):

A semiconductor sensor, comprising:

a semiconductor layer having a top surface;

a plurality of pixel surface coatings positioned above the top surface of the semiconductor layer to form a corresponding plurality of pixels, wherein each pixel surface coating is separated from each adjacent pixel surface coating, wherein the plurality of pixel surface coatings are conductive, wherein electrons incident one of the plurality of pixel surface coatings are absorbed by the one of the plurality of pixel surface coatings resulting in a charge associated with the pixel corresponding to the one of the plurality of pixel surface coatings such that the charge produces a readable voltage associated with the pixel corresponding to the one of the plurality of pixel surface coatings; and

a conductive layer positioned above the top surface of the semiconductor layer and positioned so that electrons passing between adjacent pixel surface coatings are incident on the conductive layer and prevented from penetrating into the semiconductor layer, wherein the conductive layer is insulated from the plurality of pixel surface coatings.

Claim 23 (new): The semiconductor sensor according to claim 22, wherein the conductive layer comprises a light impervious material, wherein the conductive layer is light impervious

Claim 24 (new): The semiconductor sensor according to claim 23, wherein the second conductive layer comprises aluminum.

Claim 25 (new): The semiconductor sensor according to claim 16, wherein each detection surface comprises a transmit channel which allows electrons to pass through the transmit channel to the corresponding pixel surface coating.